



EPI-SODE

EPIDEMIOLOGIC SURVEILLANCE OF COMMUNICABLE DISEASE

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Pertussis on the Increase

On June 18, 2003, Dr. Donna Spence called the Health Department to report her suspicion of pertussis in an infant she had just admitted to the hospital. The infant had a spasmodic cough and characteristic "whoop," cyanosis, and an elevated white blood cell count of 23,500 with lymphocytosis. The child was treated and improved. Based on the clinical diagnosis of pertussis, Health Department staff recommended chemoprophylaxis to 38 individuals who had close contact with the child. The culture later grew Bordetella pertussis. This case is a reminder that young infants are at highest risk for acquiring clinical pertussis and often require hospitalization and that decisions to provide chemoprophylaxis are often made based on clinical findings.

Clark County is seeing an increasing number of cases of pertussis this year, with 21 cases reported as of July 8, 2003, (median age 11 years, range 4 months to 57 years), compared to 23 total cases for 2002. Pierce and King Counties are also reporting increases in pertussis. Please have a high index of suspicion for pertussis, especially in adolescents and adults with a cough lasting more than two weeks. Suspect cases should be reported to 397-8408. What follows is clinical information on pertussis.

Pertussis is a highly communicable bacterial infection of the upper respiratory tract associated with toxin-induced damage to the respiratory epithelium. Symptoms are typical of an upper respiratory infection with cough and runny nose. *Fever is absent or low-grade.* Adolescents and adults with pertussis may have mild illness, and experience only a persistent cough. However, small infants with pertussis often require hospitalization. Adults and adolescent children with unrecognized pertussis are often the source of infection for infants. Infant pertussis is still a potentially fatal infectious disease. The **incubation period** is 6-21 days after exposure (usually 7-10 days).

Pertussis presents in three stages. The initial **catarrhal stage** is the most infectious stage. The **paroxysmal stage** lasts two weeks to two months and is characterized by paroxysms of cough, between which the patient may look and feel well. Cough may be worse at night, and in a minority of cases may be associated with an inspiratory whoop. Coughing often (but not always) causes post-tussive gagging or vomiting. The **convalescent stage** lasts two weeks to several months, and is characterized by an intermittent cough.

Diagnosing pertussis:

The clinical case definition of pertussis is: A cough illness lasting at least two weeks with either paroxysms of coughing, inspiratory "whoop", or post-tussive vomiting without other apparent cause (as reported by a health professional). In an outbreak setting, a case may be defined as a cough illness lasting two weeks or longer. The catarrhal stage may be indistinguishable from a mild upper respiratory tract infection.

Laboratory testing is by nasopharyngeal aspirate (washing) or Dacron swab from the posterior pharynx for isolation of *B. pertussis* (culture). Special pertussis medium can be obtained from your laboratory. PCR testing for pertussis is available through the Washington State Public Health Laboratories, especially during outbreak situations. Arrangements must be made through Clark County Health Department Communicable Disease unit (397-8182). Dacron swabs are required for PCR specimens. The direct fluorescent antibody (DFA) for pertussis is not very helpful because of both false-positive and false-negative results. Health care providers should wear respiratory protection when collecting clinical specimens for diagnosis of suspected pertussis.

Treatment and Chemoprophylaxis for Pertussis:

Antibiotic treatment of persons with pertussis may reduce symptoms when given early in the course of illness during the catarrhal stage (first week of illness). Treatment within two weeks of onset of paroxysms limits transmission of disease to family and community contacts, but has little impact on the course of illness. Infants younger than 6 months and others with potentially severe disease often require hospitalization for supportive care and management of coughing paroxysms, apnea, cyanosis, feeding difficulties, and other complications such as pneumonia.

Infected contacts of persons with pertussis can develop a severe cough illness or a milder illness that may not be recognized as pertussis. Because persons with milder cough illnesses can spread the disease, antibiotic prophylaxis is recommended for all close contacts of pertussis cases, regardless of age and immunization history. Antibiotic prophylaxis can eliminate the organism from the respiratory tract, both interrupting transmission of disease and preventing or modifying symptomatic illness among infected contacts. Antibiotic prophylaxis for contacts of persons with pertussis is most effective when initiated within three weeks of cough onset of the primary case.

In certain high-risk cases and contacts, initiating treatment or chemoprophylaxis after three weeks of paroxysmal cough or exposure should be considered. High-risk cases and contacts include: infants aged <1 year; persons with pertussis or suspected pertussis who may expose persons at high-risk of severe disease (health care workers; labor and delivery, neonatal, pediatric and post-partum staff; pediatricians; midwives, labor coaches, pregnant women, other persons who may expose an infant).

Antibiotic regimens for prophylaxis of pertussis are the same as recommended for treatment of pertussis. Erythromycin remains the standard first line drug for both treatment of pertussis and prophylaxis of contacts. The recommended dose of erythromycin for pertussis in children is 40-50 mg/kg/day and in adults is 1-2 g/day orally in four divided doses for 14 days (maximum 2 g/day).

Precaution with treatment and prophylaxis of newborn infants:
An association between orally administered erythromycin and infantile hypertrophic pyloric stenosis (IHPS) has been reported in infants younger than six weeks of age. The risk of IHPS after treatment with other macrolides is unknown. The American Academy of Pediatrics (AAP) and CDC continue to recommend erythromycin for prophylaxis and treatment of pertussis. Physicians who prescribe erythromycin to newborn infants should inform parents of the potential risks of developing IHPS and signs of IHPS (including projectile vomiting and excessive irritability).

The AAP states that because of *in vitro* susceptibilities, clarithromycin (10 mg/kg/day in two divided doses; maximum 1 g/day, for 10-14 days) and azithromycin (10-12 mg/kg/day in one dose; maximum 500mg/day for 5-7 days) are also likely to be effective and, thus, are alternatives for patients who cannot tolerate erythromycin.

*Adapted from Public Health Seattle-King County
Guidelines for the Control of Pertussis, National Immunization Program, CDC*

SUMMARY OF SELECTED NOTIFIABLE CONDITIONS CLARK AND SKAMANIA COUNTIES, 2003 AND 2002				
CONDITIONS	CLARK COUNTY		SKAMANIA COUNTY	
	July Aug. 2003	July Aug. 2002	July Aug. 2003	July Aug. 2002
Campylobacteriosis	19	13	0	0
<i>Chlamydia trachomatis</i>	107	134	*	0
<i>E. coli</i> O157:H7	*	6	0	0
Giardiasis	*	6	0	0
Gonorrhea	26	16	0	0
<i>Hemophilus influenzae</i>	*	0	0	0
Hepatitis A	0	*	0	0
Hepatitis B, acute	0	*	0	0
Hepatitis B, chronic	10	25	0	*
Hepatitis C (chronic)	29	27	0	0
HIV	*	*	0	0
Latent TB infection +	24	39	0	0
Measles	0	0	0	0
Meningococcal disease	*	*	0	0
Mumps	0	*	0	0
Pertussis	6	*	0	0
Rubella (including congenital)	0	0	0	0
Salmonellosis	*	9	0	0
Shigellosis	*	*	0	0
<i>Streptococcus</i> Group A Invasive	*	0	0	0
Syphilis (primary & secondary)	*	0	0	0
TB active disease	*	*	0	0

*<5 cases
+Patients followed by the health department

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